

REMARKS

At the issuance of the outstanding Office Action, Claims 1-5, 7, 8, 10, 11 and 13-24 were pending in the application. Claim 1 was objected to and has been amended in accordance with the Examiner's suggestion. All pending claims stand rejected under 35 USC §102 and 35 USC §103. Applicants respectfully request withdrawal of these rejections in light of the following remarks.

Claims 1-5, 7, 8, 10, 11 and 13-24 stand rejected under 35 USC §102(b) as anticipated by *Heisterberg* (3,589,549). *Heisterberg*, relates to a tank scraper structure assembly that is used to keep tank walls clean when crude oil, with a waxy content, is stored within a tank. The outstanding Office Action asserts that *Heisterberg* discloses a means for mounting a shoe 75 on the floating roof and an electrically conductive bonding strap 85 that is mounted in a way that it is capable of providing a preferred path participating electrical current through an oxygen deficient environment. Applicants respectfully disagree.

Initially, Applicants point out that there is no discussion by *Heisterberg* of any method of protecting a floating roof tank from the effects of a lightning strike (Claims 7, 8, 10, 11, 15) nor does *Heisterberg* discuss or is in any way concerned with electrical properties. Instead, as noted previously, *Heisterberg* discloses a scraper structure assembly for cleaning tank walls. Item 75 referred to in the outstanding Office Action is not a shoe assembly. Rather, it is the upper portion of the scraper structure 70, which is curved and is spaced immediately below the sealing mechanism 30, which would be the shoe assembly in the sealing mechanism described by *Heisterberg*.

Next, the outstanding Office Action refers to Item 85 in Figure 3 as an electrically conductive bonding strap. *Heisterberg* refers to Item 85 as a hanger bar which is

mounted on the mounting brackets 60 which depend from the lower annual plate 25 of the floating roof 20 (see Column 4, lines 50-55). Applicants invite the Examiner's attention to Column 4, line 64 through Column 5, line 55, which describes in detail the mounting of the hanger bars so as to support the scraper assembly. In essence, the hanger bar is disposed within slots to allow pivotal movement of the scraper assembly. Since the slots are designed to permit movement, they do not have electrical bonding across them and will not provide a secure electrical path for current flow. In addition, these mechanical joints may easily corrode resulting in a high local resistance. Similarly, the connection at the tank's side wall does not have electrical bonding and would not provide a secure path for current flow.

Furthermore, *Heisterberg* does not disclose or suggest that its scraper structure should contact the wall of the tank in a way to provide electrical contact. Instead, *Heisterberg* requires only that the scraper plates maintain "scraping contact" (Column 5, lines 34-35). Such scraper contact could well be sufficient to remove a waxy material and yet not be in metal to metal contact with the side wall, which would be necessary to provide a secure path for current flow.

Claims 1-5, 7, 8, 10, 11 and 13-24 stand rejected under 35 USC §103(a) as being unpatentable over *Mjellem* (2,651,433) in view of *Nelson* (3,942,674). Applicants respectfully submit that these references do not establish a prima facie case of obviousness and traverse these grounds of rejection for the following reasons.

The outstanding Office Action asserts that *Mjellem* discloses a bonding strap 23 connected at one end to a lower portion of the shoe assembly below liquid level and at a point where the shoe assembly contacts the inner wall and connected at a second end to the floating roof below liquid level, the bonding strap being of a

length to minimize its self inductance, wherein the bonding strap is entirely below liquid level. Further, the Office Action states that *Mjellem* does not disclose the bonding strap 23 being electrical conductive material. Finally, the Office Action relies on *Nelson* for a teaching of a bonding strap 5 of a floating cover made of electrically conductive material.

Initially, Applicants point out that *Mjellem* does not use item 23 as a bonding strap of low self inductance, but as a spring. As the Examiner has correctly pointed out, *Mjellem* does not disclose item 23 as being electrically conductive material. As such, the reference neither discloses nor suggests the use of an electrically conductive bonding strap configured in accordance with the present invention so as to provide a preferred path for dissipating electrical current. Indeed, the reference includes no discussion of electrical issues nor does it mention protection from the effects of lightning strikes.

The *Nelson* reference does mention electricity. However, only “static electricity” discharges are addressed by the relatively long cable “loops” (Column 1, line 5) which are charges that build up over a period of time that could range from seconds to minutes. Physically long conductive paths are adequate for the static electricity discharge function, but not for lightning protection. See paragraph 4, line 27 to page 5, line 13 of the present specification. On the other hand, the present invention requires that the electrical path be as short and direct as possible. The entire conductive path is of a length that would minimize its self inductance, which is required to effectively carry lightning discharge current that builds up from zero to maximum current over a period of approximately 1 microsecond. In addition, *Nelson* neither discloses nor suggests that its cable loops are disposed entirely below liquid level. Indeed, it appears from Figure 2, that at least a portion of these loops are disposed above liquid level at least in certain embodiments.

Applicants respectfully submit that the combination of these two references is improper and even if properly combined neither disclose nor suggest the present invention. Neither the primary reference nor the secondary reference for that matter addresses the problem that is solved by the present invention, namely protection from the effects of lightning strikes. Indeed, the primary reference is completely devoid of any discussion of any electrical aspects.

It is well established that when various pieces of prior art each contain elements of an invention, the prior art can be combined together to invalidate a patent on the invention only when there is some motivation, suggestion or teaching to combine the prior art. It is also well established that the motivation must come from the prior art itself and not from Applicants' own disclosure. Here, where the primary reference does not even hint at the problem solved by the present invention and the secondary reference is directed to solving a related, but quite different problem, the combination of the two references is improper.

Even assuming for the sake of argument that the references were properly combined, the combination would not render the present invention obvious. As pointed out previously, item 23 is part of a spring arrangement which allows for there to be a greater spacing between the shoe and the walls of the tank to facilitate the assembly of the elements of the tank and inspection and repair. There is nothing in the *Mjellem* reference that would provide any motivation for a person of ordinary skill to take the electrically conductive loops from *Nelson* and substitute them for the spring of *Mjellem*. And even if such substitution were made, the resulting configuration would not be successful because of the length of *Nelson's* loops.

According to the MPEP § 2143 there are three basic criteria for establishing a prima facie case of obviousness, none of which have been satisfied by the Examiner in the outstanding Office Action:

there must be some suggestion or motivation to modify the reference or to combine reference teachings

there must be a reasonable expectation of success

the prior art reference (or references when combined) must teach or suggest all the claim limitations.

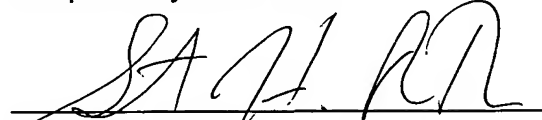
NOTE: The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). The cited prior art includes no such teaching or suggestion and, as noted above, the combination would not be successful.

Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. In re Kotzab, 217 F. 3d 1365, 1371 (Fed. Cir. 2000). The outstanding Office Action includes no such findings.

In light of the foregoing, Applicants respectfully request a favorable reconsideration of the Office Action of March 2, 2006 and an early Notice of Allowance.

Please charge Deposit Account No. 03-1620 for the requisite fee for the two-month extension of time and for any other fees which are or may be due. An additional copy of this response is enclosed for this purpose.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "S.H. Roth", written over a horizontal line.

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Enclosures

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